

## **REMARKS**

The Office action mailed 6 October 2006, has been received and its contents carefully noted. The pending claims, claims 25 and 47-55 were rejected. By this amendment, claims 1-46 have been canceled and claim 47 is amended. Support may be found in the specification and the claims as originally filed. No statutory new matter has been added. Therefore, reconsideration and entry of the claims as amended are respectfully requested.

### **Rejection under 35 U.S.C. 112, first paragraph**

The Examiner rejected claims 47-55 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner noted that the specification provides support for “immunizing” but not “protecting” a subject.

Applicants have amended the claims such that the methods are directed towards “immunizing” a subject. Therefore, the rejection under 35 U.S.C. 112, first paragraph, should properly be withdrawn.

### **Rejection under 35 U.S.C. 112, second paragraph**

The Examiner rejected claims 54 and 55 under 35 U.S.C. 112, second paragraph, as being indefinite. Specifically, the Examiner deemed that claim 54 was ambiguous in view of “protecting” in claim 47.

Applicants respectfully submit that claim 54 in view of claim 54, as amended, is clear and definite. Therefore, the rejection under 35 U.S.C. 112, second paragraph, should properly be withdrawn.

### **Rejection under 35 U.S.C. 102(b)**

The Examiner rejected claim 25 under 35 U.S.C. 102(b) as being anticipated by Thorpe et al.

Applicants respectfully submit that claim 25 has been canceled. Therefore, the rejection under 35 U.S.C. 102(b) should properly be withdrawn.

**Rejection under 35 U.S.C. 103(a)**

The Examiner rejected claims 25 and 47-55 under 35 U.S.C. 103(a) as being unpatentable over Thorpe et al. and in view of Yan et al. In particular, the Examiner noted that Thorpe et al. does not teach protecting a subject from ricin intoxication. However, the Examiner deemed that it would have been obvious to make a deglycosylated ricin A chain according to Thorpe et al. and then use it to protect a subject against ricin intoxication.

Applicants respectfully submit that Thorpe et al. is directed towards killing target cells with ricin immunotoxins rather than immunizing a subject with a toxin modified to have reduced toxicity. Thorpe et al. teaches modifying ricin by removing carbohydrates in order to increase the potential toxicity of ricin and immunotoxins. Thus, Thorpe et al. does not teach or suggest immunizing a subject from ricin intoxication as immunity to ricin would decrease the potential toxicity of immunotoxins.

In addition, Applicants respectfully point out that the last paragraph of column 1 of Thorpe et al. which the Examiner emphasized in the rejection states:

Immunotoxins prepared from ricin (or just it's A chain) that have been modified in this way should have a better chance of gaining access to and killing their target cells. (emphasis added)

Thorpe et al. defines "immunotoxins" as "antibody-ricin conjugates" in the Abstract on page 197. Thus, in context, the last paragraph of column 1 of Thorpe et al. relates to preparing antibody-RTA conjugates which are effective at killing target cells. Thus, Thorpe et al. does not teach or suggest immunizing a subject from ricin intoxication with free (unconjugated) RTA as immunity to ricin would decrease the potential toxicity of the antibody-ricin conjugates.

Again, Applicants respectfully submit that Thorpe et al. is directed towards killing target cells with ricin immunotoxins having increased toxicity rather than immunizing a subject with a toxin having decreased toxicity. The difference between killing target cells and immunizing a subject is not insignificant. Whether one would like one's own cells killed by ricin or be immunized against ricin intoxication would depend on the individual. For example, one needing immunotherapy to target and kill cancerous cells would not want to have immunity to ricin toxin as the therapeutic effect would be reduced. On the other hand, a healthy subject at risk of being

exposed to ricin toxin would want to be immunized against ricin toxin.

Yan et al. is directed towards immunizing a subject against ricin intoxication with a ricin toxoid rather than killing target cells with a ricin immunotoxin. The teachings and objectives of Thorpe et al. are opposite to those of Yan et al. Yan et al. teaches treating ricin with formaldehyde to result in a ricin toxoid having decreased toxicity and then immunizing a subject with the toxoid. Applicants respectfully submit that since the teachings and objectives of Thorpe et al. and Yan et al. are opposite to each other, one skilled in the art would not be motivated to combine their disclosures. In particular, a skilled artisan wanting to improve or enhance the activity of an immunotoxin would not be motivated to decrease its toxicity and a skilled artisan wanting to improve or enhance a toxoid suitable for use as a vaccine would not be motivated to increase its toxicity.

Further, one skilled in the art would not have been motivated to administer the chemically modified unconjugated RTA of Thorpe et al. to a subject in order to immunize a subject against ricin intoxication in accordance with Yan et al. for several reasons. First, the toxoid (formaldehyde treated ricin) of Yan et al. is not the same compound as the deglycosylated RTA of the present invention. It is well known in the art that different compounds including similar compounds having different functional groups exhibit vastly different and unpredictable bioactivities *in vivo*. Second, Thorpe et al. teaches that the chemically modified RTA results in an increase in potential toxicity. In the art of toxins and vaccines, those skilled in the art strive towards developing toxoids – toxins having weakened or suppressed, not increased, toxicity while maintaining immunogenicity. Because different compounds exhibit different bioactivities and because the chemically modified RTA of Thorpe et al. results in increased toxicity, one skilled in the art would not have a reasonable expectation of successfully inducing immunity against ricin intoxication by administering the chemically modified RTA of Thorpe et al. in place of the formaldehyde toxoid of Yan et al.

Therefore, Applicants respectfully submit that the claimed invention is novel and unobvious and the rejection under 35 U.S.C. 103(a) should properly be withdrawn.

### **Request for Interview**

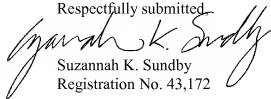
Either a telephonic or an in-person interview is respectfully requested should there be any remaining issues.

### **CONCLUSION**

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, in the event that additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. §1.136(a), and any fees required therefor are hereby authorized to be charged to **Deposit Account No. 210-380**, Attorney Docket No. **034047.004CON1 (RIID 99-12A)**.

Respectfully submitted,



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